

Flow Smooth

Pulse Dampeners, Shock Alleviators, and Fluid Power Accumulators

FlexOrber

Low Pressure PTFE Diaphragm



PTFE FLEXFLON MEMBRANES Featuring:

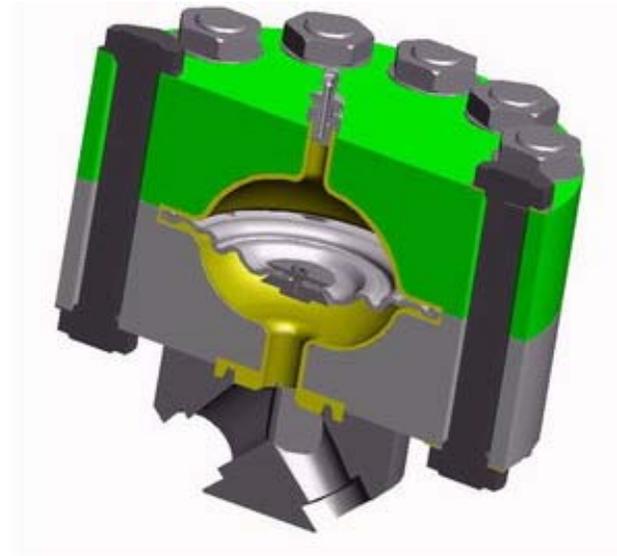
- **AGRESSIVE CHEMICAL**
Typical chemical metering pumps are matched by flow smoothing dampeners from this 0.5 - 16 Liter Flexorber LP range of 12 damper sizes.
- **FORCING RESPONSE from PTFE**
As PTFE / Teflon ® / Flexflon™ is a stiff un-responsive diaphragm material, the Flexorber pulse dampeners force response to pulsation by causing the flow to go through the dampening chamber - with separate inlet and outlet connections.
- **HIGHER FREQUENCY ABILITY**
This same flow-through feature that cause reaction to volumetric flow fluctuation, also enables high frequency pulsation to be intercepted and damped.
- **IN PLACE FLUSHING**
These Flexorber low pressure pulsation dampeners are also in place flow-through flushable between each different chemical campaign.
- **SMOOTH SURFACES**
In place flushibility plus an extra polishing operation makes the Flexorber LP an often specified design for food, drug, and liquid chromatography use, with Tri-Clamp or IDF connections.

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SECONDARY CONTAINMENT - HAZARD ALERT Featuring:

- [MATCHES "SANDWICH" AND "SEALED" DIAPHRAGM PUMPS](#)
High performance diaphragm process pumps with rupture detection often deployed as the main fluid mover for large flow rates of liquids that are compressible and so need jacowski pulsation & shock surge pulsation suppression.
- **EVEN PYROFORIC SERVICE**
Flexorber pulsation dampers with flow through and several hot nitrogen flush connections are ideal for pyrofores.
- **WITH VSG DRIVES**
When API 675 pumps are used in API 674 application because of their "sealed - hermetic" high pressure designs. Flow control of these "metering" pumps is by variable speed drives. Variable speed results in a wide range of forcing frequencies. Only the multi-port flow through FlexOrber pulsation dampeners can match the system needs.
- **DIAPHRAGM CHOICES**
Please see <http://www.pulsation-damper.co.uk/Pulsation-damper-PTFE-Diaphragm-Stainless-housing-Low-Pressure.html> top right corner for diaphragm alternates that go from the most robust to ultra sensitive covering all pulsation damping requirements.
- **NOT BELLOWS**
Pulseguard also offer bellows type dampeners, but as a bellow is the most crevatiuous form of membrane the smooth PTFE diaphragm surface in a flow though housing of the Flexorber HP dampener is generally process preferred.

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Pipehugger

Low Pressure Bladder Dampener



LARGE DIAMETER DAMPENERS for Low Pressure and Suction Featuring

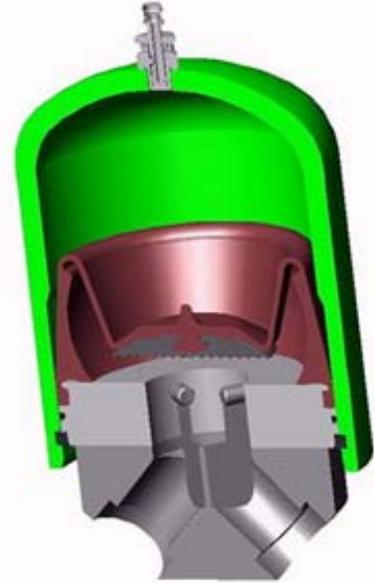
- [ACCELERATION HEAD REMOVAL](#)
First class for addressing suction acceleration head. The separate inlet port allows continuous flow, while the separate outlet to a pump provides the jerking flow without the need to lose pressure (k) by having to accelerate the entire supply line.
- [PRESSURE LOSS SAVING](#)
The lack of reciprocation up and down a single connection produces much less pressure pulsation than non flow-through designs.
- [LOWER COST COMPATIBILITY](#)
Suitable for difficult to handle liquids because only the base plug and anti-extrusion plate become wetted, small amounts of Alloy 20, Hasteloy, Titanium, even Zirconium will complete the damper construction.
- [PREVENTS CAVITATION](#)
Cavitation reduction by instant filling of pump chambers stops negative pressure from running back up the supply line, and breaking the fluid column, which is the normal reason for pump knock.
- [HIGH FREQUENCY INTERCEPTION](#)
High Frequency pulsation , and acoustic response from the lengths of the piping is intercepted by the LP Pipehugger range just as efficiently as in the High pressure Pipehugger damper.

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PipeHugger

High Pressure Bladder Dampener



LARGE DIAMETER DAMPENERS for High Pressure and High Frequency Featuring

- [PULSATION DISSIPATION](#)
Are best at dampening pressure pulsation as a pressure spike entering a large diameter chamber from a smaller hole, dissipates before it can reflect from the vessel wall.
- [ASSURED RESPONSIVENESS](#)
The greater dimension provides area for separate inlet outlet connections - this gives in-line flow-through pulse interception. Interception ensure the response that dampens the pulsation.
- [COMPETITIVE HOUSINGS](#)
The bladder has liquid inside, the process fluid does not contact the shell, the shell is available in low cost epoxy coated carbon steel.
- [PARTICULATE SUITABILITY](#)
Thoroughly suitable for sludge and slurries, and solids carrying applications. When the bladder flexes it shakes all particulate loose - it is not packed into a "cake" against the damper wall, as in gas bag dampeners.
- [PULSATION IS DIRECTIONAL](#)
Full 180 degrees flow direction change causes all transients to impinge on the flexible membrane.

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PumpGuard

Flow Through Flex Tube Pulsation Dampener



HIGH VISCOSITY - PLUG FLOW Featuring:

- **MATCHES HOSE PUMPS**
Connections 3" / 75mm through 6" / 150mm. For pulp and paper coatings slurries.
- **NO ENTRAPMENT**
Food and drug industry version with polished stainless wetted parts and tri-clamp or IDF fittings.
- **IN PLACE FLUSHING**
Direct straight line flow through, rod-able if ever blocked.
- **LARGER PIPE SYSTEMS**
Other sizes 8" / 200mm through 14" / 356mm for inline standing wave shock and surge.

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PipeGuard

Bladder Pulsation Dampener

SMALL DIAMETER PULSE DAMPERS Featuring

- [FLOW STABILIZATION](#)
Are excellent flow fluctuation stabilizers.
- [HIGH PRESSURE AT LOW COST](#)
"PipeGuard" "Slim Line" range dampeners are extremely competitive for high pressure application.
- [FOR SALINE ENVIRONMENTS](#)
With full stainless steel construction are ideal for offshore oil and gas control systems.
- **GREATER INTEGRITY**
The gas bag "bladder" in this damper design is a seamless one piece molding; greatest compatibility and integrity.

Common Elastomer Availability from MEMBRANO_FLEX Ltd. Div of LDI Ltd for you to choose from:-
Information Source - edited from "KEVIN-TECH" aka Kevin Bebb's Technical Notes - LDI Ltd. in-house proprietary, since 1963. The compound ingredient percentages are chosen by LDI Ltd. to cause similar physical properties, and from advice by the Rubber & Plastics Research Association (aka RAPRA.) and others. :-

In the uncured / un-polymerized state,: To be easily transfer-inject-able over distances greater than 3x the item diameter, without the use of long oil alkyds etc. for plasticization.

In the cross linked / polymerized state, to have :-

1. Elongation at break in excess of 600%
2. UTS greater than 2000 psi (140 bar)
3. IRH Shore "A" scale hardness 55-60
4. Good compression set resistance for seal-points
5. The use of "non-leaching" plasticizer - IE that cross links within the cured material
6. No Sulfur

MATERIAL TO CHOOSE FROM.

Note - "LDI" are not compatibility engineers. Be sure to check your selection against the "O" rings Seal, gasket, valve diaphragm, pump packings that have proved satisfactory for your system.

- [LONGER LIFE](#)
The anti-extrusion plate of this pulsation dampener can not jam like stem guided poppet valve.